REMARKS

The Applicants thank Examiner Alter for her time and consideration given during the telephonic interview of June 30, 2008.

Claims 1, 2, 4, 5, and 7-48 have been finally rejected by the Examiner. Upon entry of this amendment, Claims 3 and 6 have been cancelled, and Claims 1, 2, 4, 5, and 7-48 will remain pending in this application. The four independent claims are Claims 1, 8, 36, and 40.

Consideration of the present application is respectfully requested in light of the above claim amendments to the application and in view of the following remarks.

Summary of Telephonic Interview of June 30, 2008

The Applicants and the undersigned thank Examiner Alter for her time and consideration given during the telephonic interview of June 30, 2008. During this telephonic interview, a proposed amendment to the claims was discussed. The Applicants provided the proposed amendment to the claims in advance of the interview.

The Applicants' representative explained to Examiner Alter that the prior art of record does not provide any teaching of an active status indicator comprising a light capable of illumination, the illumination being visible from the exterior and the light operated by the defibrillation circuitry without user input, wherein the light is illuminated when the a switch is in the first state indicating that the defibrillation circuitry is in the standby mode and is ready to operate normally in the operational mode.

The Applicants' representative explained that the prior art of record, such as U.S. Pat. No. 6,366,809 issued in the name of Olson et al (hereinafter, the "Olson reference") does not provide any teaching of an active status indicator that has a light operated by the defibrillation circuitry without user input and which is visible from the exterior of the AED. Instead, the Olson reference describes a battery status indicator positioned under a lid.

The Examiner asked the Applicants' representative to explain the support for the proposed claim amendment. The Applicants' representative explained that the proposed claim amendment could be found in Figure 7 of the Applicants' published application in which reference numeral 30 denotes the active status indicator.

Examiner Alter expressed that she understood the Applicants' representative comments and the concepts presented by the amended claims. Examiner Alter indicated that an update search would be conducted after the Applicants submit the proposed changes in a formal amendment.

The Applicants and the undersigned request Examiner Alter to review this interview summary and to approve it by writing "Interview Record OK" along with his initials and the date next to this summary in the margin as discussed in MPEP § 713.04, p. 700-233 (8th Ed., Rev. 6, Sept. 2007).

Claim Rejections under 35 U.S.C. § 103(a)

The Examiner rejected Claims 1-2, 4-5, and 7-48 under 35 U.S.C. § 103(a) as being unpatentable over the Olson reference. The Examiner rejected Claims 1-2, 4-5, and 7-48 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 5,868,794 issued in the name of Barkley et al. (hereinafter, the "Barkley reference").

The Applicants respectfully offer remarks to traverse these pending rejections. The Applicants will address each independent claim separately because the Applicants believe that each independent claim is separately patentable over the prior art of record.

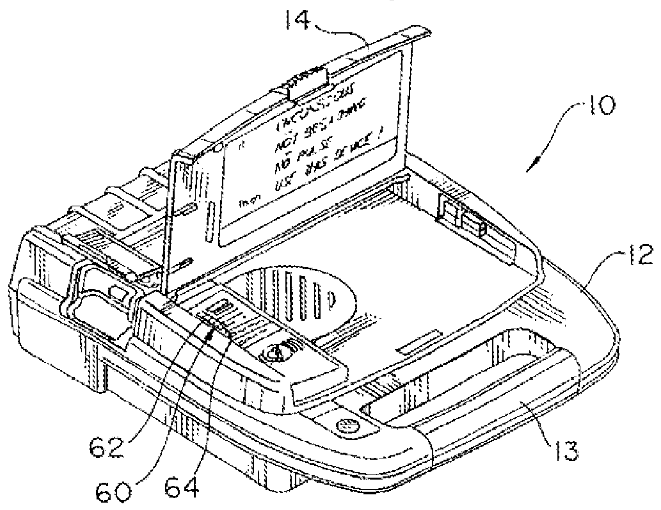
Independent Claim 1

The rejection of Claim 1 is respectfully traversed. It is respectfully submitted that the Olson and Barkley references, alone or in combination, fail to describe, teach, or suggest the combination of: (1) defibrillation circuitry housed within (2) an enclosure having (3) an exterior, the defibrillation circuitry including: (4) a switch having a (5) first state and (6) a second state and switchable there between (7) for controlling energy flow between the defibrillation circuitry and a power source, (8) the switch in the first state placing the defibrillation circuitry in a standby mode and (9) the switch in the second state placing the defibrillation circuitry in an operational mode, (10) in the operational mode the defibrillation circuitry is capable of delivering a shock to a patient and (11) in the standby mode the defibrillation circuitry is incapable of delivering the shock to a patient; and (12) an active status indicator comprising a (13) light source capable of illumination, (14) the illumination being visible from the exterior and (15) the light source operated by the defibrillation circuitry (16) without user input, (17) wherein the light source has a first illumination when the switch is in the first state (18) indicating that the defibrillation circuitry is in the standby mode and is ready to operate normally in the operational mode and (19) presently maintenance is not required, as recited in amended independent Claim 1.

The Olson Reference

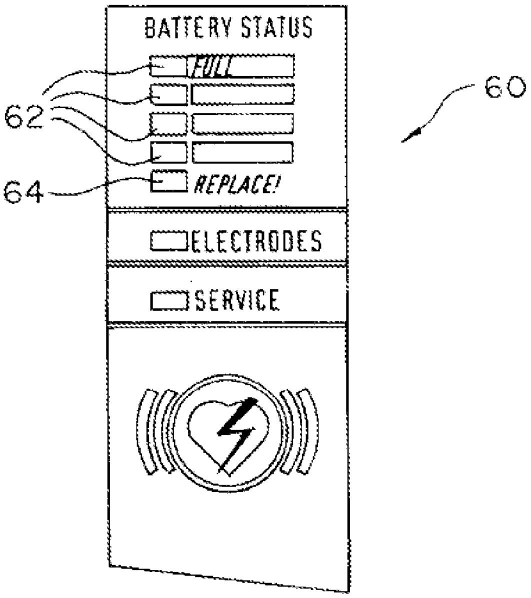
The Olson reference describes an AED 10 with battery status indicator 60 positioned under lid 14 as illustrated in Figure 4. Status indicator 60 is electrically connectable to memory component 18 of battery pack 15 at battery contacts 56C and 58C via a microprocessor of electrical system of AED 10. As shown in greater detail in Figure 5, status indicator 60 has a plurality of green indicator lights 62 and a red replace light 64 to indicate the relative amount of power remaining in the battery cells 17 of battery pack 15. Olson reference, column 3, lines 21-29.

Fig. 4



Green indicator lights are arranged with a sufficient number of lights so that an operator can determine the proportional amount of remaining battery capacity by looking at the number of lights illuminated. For example, if indicator 62 includes four lights, illumination of all four green lights indicates full battery status while illumination of three lights indicates three-quarter battery status and illumination of two battery lights indicates one-half battery status, and so on. Olson reference, column 3, lines 29-37.

Fig. 5



In this way, an operator may simply look at status indicator 60 to determine how much energy remains in battery pack 15. Moreover, when red replace indicator light 64 is illuminated, battery pack 15 must be replaced. However, memory component 18 and AED 10 can be programmed so that when the red replace light is illuminated, AED 10 can still provide enough additional shocks (e.g nine) to perform one more rescue with battery pack 15. Olson reference, column 3, lines 27-45.

The Olson reference explains a first event of directly testing battery voltage levels occurs during a rescue mode operation of defibrillator 10 when an operator opens lid 14 to begin a rescue and access the electrodes of AED 10. The opening of the lid 14 is detected by lid switch 90, which effectively functions as an on/off switch. Processor 74 then begins its rescue mode operation which includes performing a lid opened self-test. Olson reference, column 6, lines 1-5.

During the lid opened self-test, processor 74 checks the charge state of battery pack 15 as well as other components such as the interconnection and operability of electrodes 50. The charge state of battery pack 15 is checked by monitoring the voltage level signals provided by power generation circuit 84. If battery pack 15 is determined to have a low charge, lights 64 on status indicator gauge 60 is illuminated by processor 74 and battery memory 18 is updated by processor to store a "replace battery" status. Olson reference, column 6, lines 6-15.

If the lid opened self-test is successfully completed, processor 74 permits continued operation of AED 10 in a rescue mode of operation. After detecting an impedance indicating the proper placement of electrodes 50, an automatic sequence of analyzing heart rhythm of the patient for a shockable rhythm and prompting use of CPR as appropriate when a nonshockable rhythm is present. When a shockable cardiac rhythm is detected, processor 74 begins a first charge sequence of charging high voltage generation circuit 86 and initiating a first shock sequence to the patient with cautioning voice prompts to press a rescue/shock button and stand clear. Operator actuation of rescue switch 18 results in the application of a defibrillation pulse of preferably about 200 joules to the patient to complete the first series of analyze/charge/shock sequences. Following the first series of analyze/charge/shock sequences, processor 74 ends rescue mode operation of defibrillator 10 after a subsequent series of analyze/charge/shock sequences have been performed, or lid 14 is closed. Olson reference, column 6, lines 16-33.

A lid closed self-test is also initiated and performed by processor 74 when lid 14 is closed following rescue mode operation of the defibrillator 10. During the lid closed self-test processor 74 performs a comprehensive check of the status and functionality of defibrillator 10, including the charge state of battery pack 15. The state of battery pack 15 is checked in a manner like that described for the lid opened self-test. Olson reference, column 6, lines 34-40.

Of course, both the lid open and lid closed test consume energy from battery pack 15. Processor 74 tracks this use of battery energy using the parameters identified above and updates memory component 18 of battery pack 15 so that status indicator gauge 60 accurately reflects the ongoing battery usage of AED 10. Olson reference, column 6, lines 41-46.

In addition, a daily self test and a weekly self test of AED 10 is performed during which the voltage level of battery cells 17 of battery pack 15 is checked. The daily self-test is initiated and performed by processor 74 at a predetermined time each day (i.e., every twenty-four hours) while the weekly self test occurs at a predetermined time one day each week. Processor 74 illuminates replace battery indicator 64 of status gauge indicator 60 and activates alarm 96 if faults are identified during the daily self-test or weekly self test. The weekly self test also includes a test of the ability of high voltage generation circuit 86 to sequentially operate in its charge and discharge modes, with the charge being dumped to internal load 98. Processor 74 updates memory component 18 of battery pack 15 with the number of charges (parameter x in equations) so that memory component 18 and status indicator gauge 60 reflect the energy capacity used during the weekly self test. Olson reference, column 6, lines 47-62.

In view of the description of the AED in the Olson reference, it is clear to one of ordinary skill in the art that a user of an AED must at least open the lid 14 of the AED described by the Olson reference in order to obtain any status of the operating state of the AED. It is apparent to one of ordinary skill in the art that the status of the AED in the Olson reference cannot be determined by looking at the unit when viewing the exterior of the unit and without any user input or action provided to the AED. Therefore, the Olson reference does not provide any teaching of an active status indicator comprising a light source capable of illumination, the illumination being visible from the exterior and the light source operated by the defibrillation circuitry without user input, wherein the light source is illuminated when the switch is in the first state indicating that the defibrillation circuitry is in the standby mode and is ready to operate normally in the operational mode and presently maintenance is not required, as recited in amended independent Claim 1.

The Barkley Reference

The Barkley reference describes an AED 10 that includes a plastic case 12 with a carrying handle 14 on the front portion. A battery compartment (as will be later described) in the rear portion of AED 10 encloses a battery pack 16, the battery pack 16 being removably disposed within the battery compartment. A visual maintenance indicator 20 and a data access door 22, which conceals a serial connector port 23 and a data card slot 24, are located on the outside of case 12 for easy access by an operator. Barkley reference, column 2, lines 48-56.

Case 12 also includes an electrode compartment 26 defined in the top portion of case 12 (depicted in FIG. 2). An illuminatable rescue/resume switch 18 is disposed adjacent to electrode compartment 26. The electrode compartment 26 is closed by lid 27, lid 27 being mounted to case 12 by hinges (not visible). Lid 27 covers the rescue/resume switch 18 when the lid 27 is in the closed disposition, the closed disposition being depicted in FIG 1. The rescue/resume switch 18 is actually a single switch with illuminatable labels alternatively indicating the "resume" 49 or the "rescue" 48 function, "rescue" 48 appearing above the switch 18 and "resume" 49 appearing below the switch 18, depending on whether AED 10 is cuing the operator to perform a rescue or resume operation by activating switch 18. Barkley reference, column 2, line 57 through column 3, line 4.

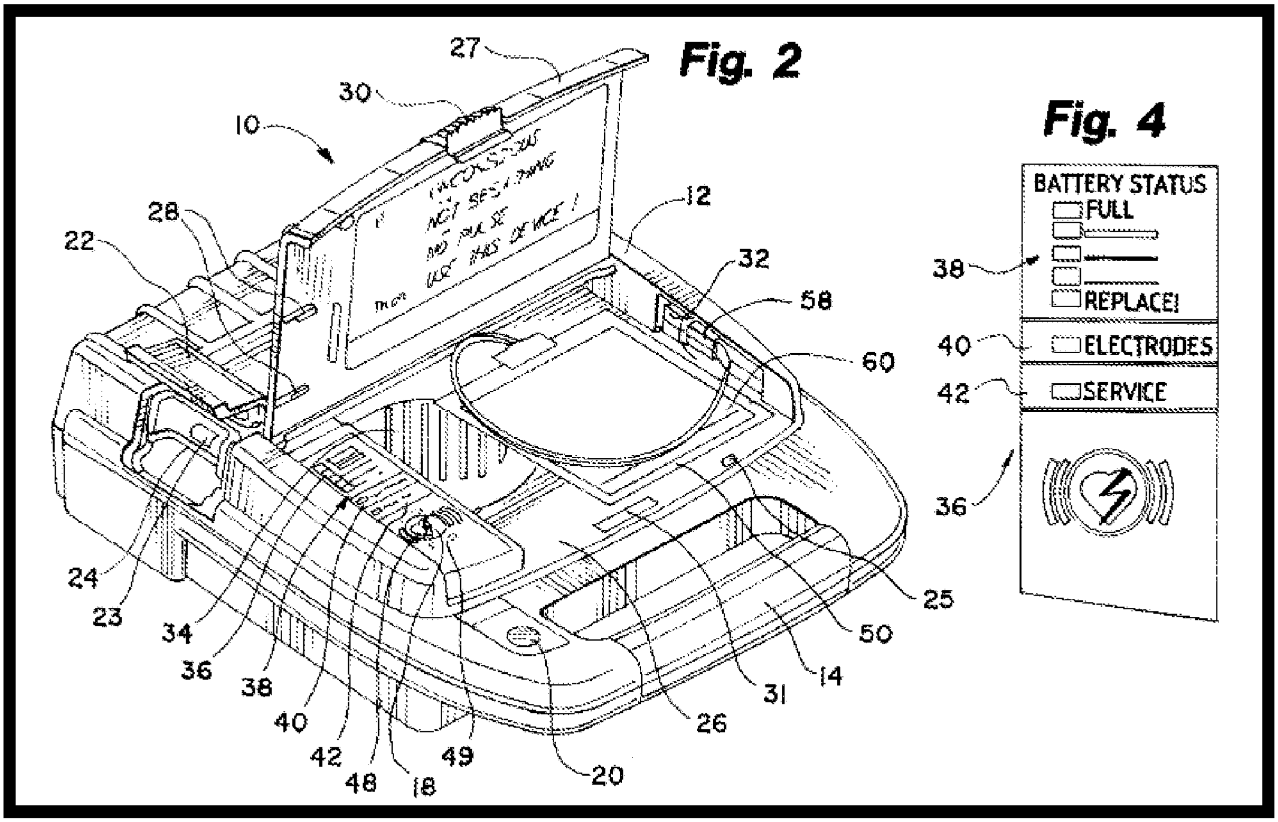


Fig. 2

Fig. 4

A data card storage bracket 28 is formed on the inside of the lid 27 for holding a data card 29 for use in recording the parameters of a rescue intervention. The data card 29 is insertable into the data card slot 24. A bayonet-type releasable latch 30 holds lid 27 closed when AED 10 is not in use by engaging a receiving recess 31 (FIG. 2) defined in the floor of electrode compartment 26. Lid 27 is opened by grasping the underside of latch 30, pushing in to disengage latch 30 from recess 31 and lifting upward on latch 30 to gain access to electrode compartment 26. Opening the lid 27 activates a lid open switch 25. The lid open switch 25 may be any suitable switch such as a reed switch or a Hall effect switch. Barkley reference, column 3, lines 5-17.

An electrode connector 32, speaker 34 and diagnostic display panel 36 are disposed on case 12 within electrode compartment 26. The diagnostic display panel 36 is disposed adjacent to the illuminatable rescue/resume switch 18. Diagnostic display panel 36 includes visual "Battery Status" indicator light 38, "Electrodes" indicator light 40, and "Service" indicator light 42. An instruction and safety label is located in the inside surface of lid 27. Electrodes 50 are disposed within electrode compartment 26 and are removably connected to electrode connector 32 by connector 58. Electrodes 50 typically include a pair of electrodes for attachment to a patient in a sealed package 60. Barkley reference, column 3, lines 18-30.

The rescue mode operation of AED 10 is initiated when an operator opens lid 27 to access electrodes 50. The opening of lid 27 is detected by lid switch 25. In response to this action, power control circuit 84 activates power generation circuit 82 and initiates the rescue mode operation of processor 74. Processor 74 then begins its rescue mode operation by switching maintenance indicator 20 to a maintenance required state (e.g., a yellow visual display in one embodiment), by flashing the "rescue" light associated with resume/rescue switch 18 and the indicator lights on diagnostic display panel 36, and by performing a lid opened self-test. Barkley reference, column 5, lines 5-16.

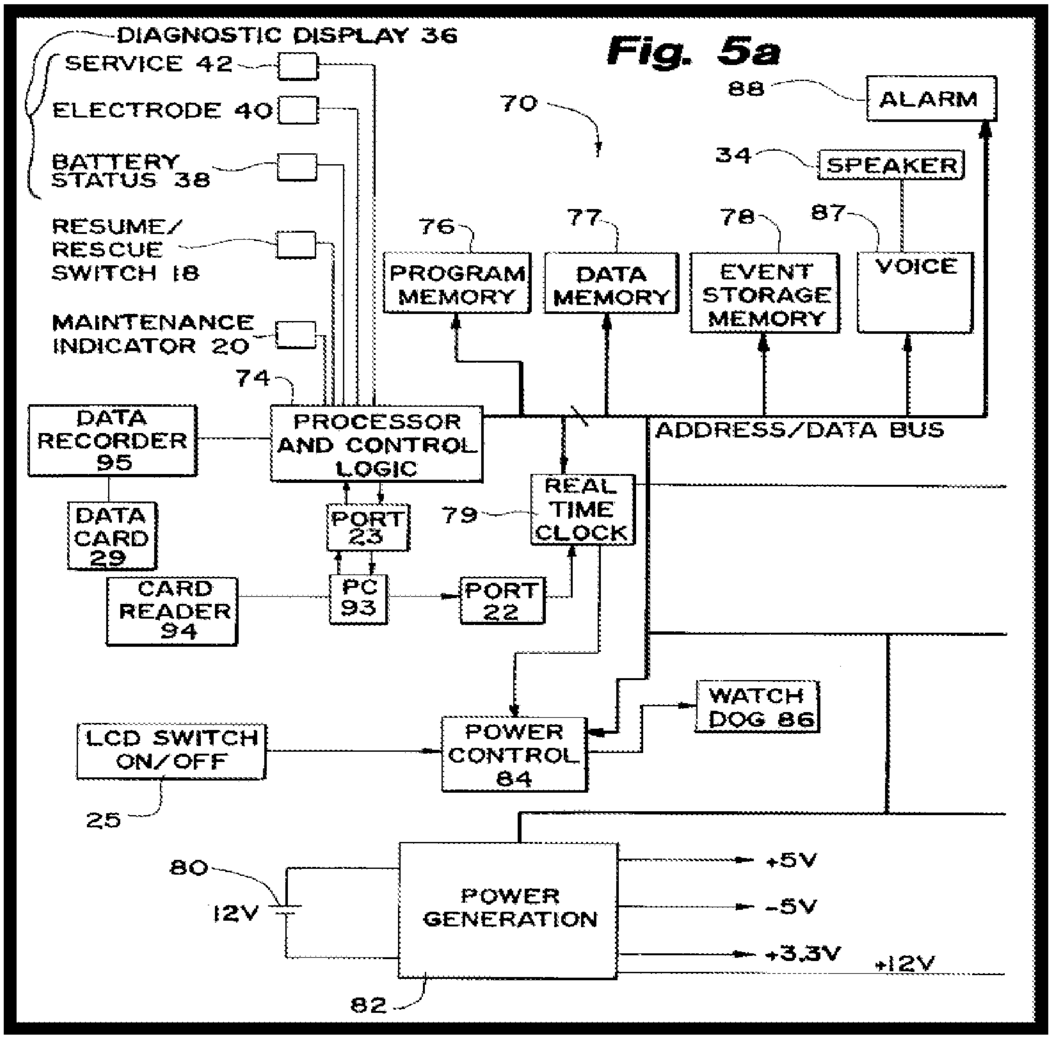


Fig. 5a

Conventional memory test routines are implemented to check the functionality of program memory 76, data memory 77 and event memory 78 which are illustrated in Figure 5a above. Maintenance indicator 20 is switched to its maintenance required state by processor 74 if faults are identified during the lid closed self-test in order to alert the operator that maintenance is required. No audible alarms are actuated if faults are identified in the charge state of battery 80 or the interconnection or functionality of electrodes 50 during the lid closed self-test. Barkley reference, column 5, line 65 through column 6, line 7. (Emphasis supplied).

A daily self-test is initiated and performed by processor 74 at a predetermined time each day (i.e., every twenty-four hours). During the daily self-test, processor 74 performs all the component check operations described above that are performed during the lid opened and lid closed self-tests. In addition to illuminating the appropriate lights on diagnostic display panel 36, processor 74 switches maintenance indicator 20 to its maintenance required state if faults are identified during the daily self-test. Barkley reference, column 6, lines 8-16. (Emphasis supplied).

Processor 74 also initiates and performs a weekly self-test at a predetermined time one day each week. During the weekly self-test processor 74 performs all the component check operations described above that are performed during the daily self-test. In addition, processor 74 causes high voltage generation circuit 83 to sequentially operate in its charge and discharge modes, with the charge being dumped to internal resistive load 85. While high voltage generation circuit 83 is operating in the charge mode, processor 74 monitors the time required to charge the circuit's capacitors and the capacitor voltage. A fault is identified if either is out of nominal conditions. Maintenance indicator 20 and alarm 88 are actuated in the manner described above if any faults are identified during the weekly self-test. Note that all performed test and patient data may be recorded in event memory 78. Barkley reference, column 6, lines 17-33. (Emphasis supplied).

Watch dog timer 86 is set to time watch dog time-out periods of about thirty hours (i.e., a period greater than twenty-four hour periods between daily self-tests), and is reset by processor 74 at the beginning of each daily self-test and each time lid 27 is opened activating lid switch 25. In the event control system 72 malfunctions and watch dog timer 86 times out, internal hardware then switches maintenance indicator 20 to the maintenance required state and actuates alarm 88 to alert an operator to the fact that AED 10 requires maintenance. Barkley reference, column 6, lines 34-43. (Emphasis supplied).

In view of the description of the Barkley reference, one of ordinary skill in the art recognizes that the maintenance indicator 20 of the Barkley reference is visible from the exterior of the AED. However, as described above, the maintenance indicator 20 is actuated during a fault condition. In other words, the maintenance indicator 20 is designed to signify an error or that there is something wrong with the AED. If the AED of the Barkley reference has no fault conditions or is error free, the maintenance indicator 20 is designed to do nothing.

Opposite to the Barkley reference, the active status indicator 30 of the Applicant's claimed invention includes a light source operated by the defibrillation circuitry without user input, wherein the light source is illuminated when the switch is in the first state indicating that the defibrillation circuitry is in the standby mode and is ready to operate normally in the operational mode and does not need any maintenance. In other words, the active status indicator provides an "OK", "ERROR-FREE", or "NO-FAULT" status message for the AED when the unit is in a standby mode. Meanwhile, the Barkley reference only indicates errors or fault conditions of the AED with its maintenance indicator 20.

If the maintenance indicator 20 of the Barkley reference is not actuated and if the AED of the Barkley reference is in a standby or non-rescue mode, an operator of an AED must open the lid 27 in order to receive confirmation that the AED is ready and capable to enter into an operational mode, such as its rescue mode. As noted above, opening of the lid 27 activates the lid opened self-test which can consume valuable power for the AED. On the other hand, the Applicants' claimed active status indicator 30 provides an "active status" for the AED while the AED is in a standby mode and which does not require a user to activate any self-tests for the AED.

Summary for Independent Claim 1

In light of the differences between amended independent Claim 1 and the Olson and Barkley references, one of ordinary skill in the art recognizes that these references alone or in combination cannot anticipate or render obvious the recitations as set forth in amended independent Claim 1. Accordingly, reconsideration and withdrawal of the rejection of Claim 1 are respectfully requested.

Independent Claim 8

The rejection of Claim 8 is respectfully traversed. It is respectfully submitted that the Olson and Barkley references, alone or in combination, fail to describe, teach, or suggest the combination of: (1) defibrillation circuitry housed within (2) an enclosure having (3) an exterior, the defibrillation circuitry including: (4) a battery pack (5) removably connected to said defibrillation circuitry; (6) a switch (7) having a first state and a second state and switchable there between (8) for controlling energy flow between the defibrillation circuitry and the battery pack, (9) the switch in the first state placing the defibrillation circuitry in a standby mode and the switch in the second state placing the defibrillation circuitry in an operational mode, (10) in the operational mode the defibrillation circuitry is capable of delivering a shock to a patient and (11) in the standby mode the defibrillation circuitry is incapable of delivering the shock to a patient; and (12) an active status indicator comprising (13) a light source capable of illumination, (14) the illumination being visible from the exterior and (15) the light source operated by the defibrillation circuitry without user input, wherein the light source is illuminated when the switch is in the first state (16) indicating that the defibrillation circuitry is in the standby mode and (17) is ready to operate normally in the operational mode and (18) presently maintenance is not required, as recited in amended independent Claim 8.

Similar to independent Claim 1, the references noted above all fail to provide the combination of an active status indicator comprising a light source capable of illumination, the illumination being visible from the exterior and the light source operated by the defibrillation circuitry without user input, wherein the light source has a first illumination when the switch is in the first state indicating that the defibrillation circuitry is in the standby mode and is ready to operate normally in the operational mode and presently maintenance is not required.

In light of the differences between amended independent Claim 8 and the Olson and Barkley references, one of ordinary skill in the art recognizes that these references alone or in combination cannot anticipate or render obvious the recitations as set forth in amended independent Claim 8. Accordingly, reconsideration and withdrawal of the rejection of Claim 8 are respectfully requested.

Independent Claim 36

The rejection of Claim 36 is respectfully traversed. It is respectfully submitted that the Olson and Barkley references, alone or in combination, fail to describe, teach, or suggest the combination of: (1) providing defibrillation circuitry (2) housed within an enclosure; (3) providing a processor programmed (4) to periodically test the operability of the defibrillation circuitry; (5) providing a switch having (6) a first state and (7) a second state and switchable there between for controlling energy flow between the defibrillation circuitry and a power source, (8) the switch in the first state placing the defibrillation circuitry in a standby mode and (9) the switch in the second state placing the defibrillation circuitry in an operational mode, (10) in the operational mode the defibrillation circuitry is capable of delivering a shock to a patient and (11) in the standby mode the defibrillation circuitry is incapable of delivering the shock to a patient; (12) providing an active status indicator comprising a light source capable of illumination, (13) the illumination being visible from the exterior and the light source operated by the defibrillation circuitry without user input, and (14) illuminating the light source with a first illumination when the switch is in the first state indicating that the defibrillation circuitry is in the standby mode and is ready to operate normally in the operational mode and (15) presently maintenance is not required, as recited in amended independent Claim 36.

Similar to independent Claim 1, the references noted above all fail to teach the combination of providing an active status indicator comprising a light source capable of illumination, the illumination being visible from the exterior and the light source operated by the defibrillation circuitry without user input, and illuminating the light source with a first illumination when the switch is in the first state indicating that the defibrillation circuitry is in the standby mode and is ready to operate normally in the operational mode and presently maintenance is not required.

In light of the differences between amended independent Claim 36 and the Olson and Barkley references, one of ordinary skill in the art recognizes that these references alone or in combination cannot anticipate or render obvious the recitations as set forth in amended independent Claim 36. Accordingly, reconsideration and withdrawal of the rejection of Claim 36 are respectfully requested.

Independent Claim 40

The rejection of Claim 40 is respectfully traversed. It is respectfully submitted that the Olson and Barkley references, alone or in combination, fail to describe, teach, or suggest the combination of: (1) providing defibrillation circuitry (2) housed within an enclosure; (2) providing a battery pack (3) removably connected to said defibrillation circuitry; (4) providing a switch having a first state and a second state and switchable there between (5) for controlling energy flow between the defibrillation circuitry and a power source, (6) the switch in the first state placing the defibrillation circuitry in a standby mode and (7) the switch in the second state placing the defibrillation circuitry in an operational mode, (8) in the operational mode the defibrillation circuitry is capable of delivering a shock to a patient and (9) in the standby mode the defibrillation circuitry is incapable of delivering the shock to a patient; (10) providing an active status indicator comprising (11) a light source capable of illumination, (12) the illumination being visible from the exterior and (13) the light operated by the defibrillation circuitry without user input, and (14) illuminating the light source when the switch is in the first state indicating that the defibrillation circuitry is in the standby mode and is ready to operate normally in the operational mode and (15) presently maintenance is not required, as recited in amended independent Claim 40.

Similar to independent Claim 1, the references noted above all fail to provide the combination of active status indicator comprising a light source capable of illumination, the illumination being visible from the exterior and the light source operated by the defibrillation circuitry without user input, and illuminating the light source when the switch is in the first state indicating that the defibrillation circuitry is in the standby mode and is ready to operate normally in the operational mode and presently maintenance is not required, as recited in amended independent Claim 40.

In light of the differences between amended independent Claim 40 and the Olson and Barkley references, one of ordinary skill in the art recognizes that these references alone or in combination cannot anticipate or render obvious the recitations as set forth in amended independent Claim 40. Accordingly, reconsideration and withdrawal of the rejection of Claim 40 are respectfully requested.

Dependent Claims 2, 4, 5, 7, 9-35, 37-39, and 41-48

The Applicants respectfully submit that the above-identified dependent claims are allowable because the independent claims from which they depend are patentable over the cited references. The Applicants also respectfully submit that the recitations of these dependent claims are of patentable significance.

In view of the foregoing, the Applicants respectfully request that the Examiner withdraw the pending rejections of dependent Claims 2, 4, 5, 7, 9-35, 37-39, and 41-48.

CONCLUSION

The foregoing is submitted as a full and complete response to the Non-Final Office Action mailed on May 1, 2008. The Applicants and the undersigned thank Examiner Alter for consideration of these remarks. The Applicants have amended the claims and have submitted remarks to traverse rejections of Claims 1, 2, 4, 5, and 7-48. The Applicants respectfully submit that the present application is in condition for allowance. Such action is hereby courteously solicited.

If the Examiner believes that there are any issues that can be resolved by a telephone conference, or that there are any formalities that can be corrected by an Examiner's amendment, please contact the undersigned in the Atlanta Metropolitan area (404) 572-2884.

Respectfully submitted,

/SPW/
Steven P. Wigmore
Reg. No. 40,447

King & Spalding LLP
34th Floor, IPT Team
1180 Peachtree Street, N.E.
Atlanta, Georgia 30309
Telephone: (404) 572.4600
K&S File No. 11647-105031